US Army Corps of Engineers
Rock Island District

PEORIA RIVERFRONT DEVELOPMENT ENVIRONMENTAL RESTORATION FEASIBILITY STUDY NEWSLETTER

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Newsletter No. 3 May 2002

JUNE 19, 2002, PUBLIC MEETINGS SCHEDULED

The Illinois Department of Natural Resources and the U.S. Army Corps of Engineers, Rock Island District are nearing the completion of the Peoria Riverfront Development Environmental Restoration Feasibility Study. The study is now in the public review phase. A draft report containing the study team's proposed recommendations is available for public review at the Peoria Public Library, 107 Northeast Monroe Street, and at the East Peoria Public Library, 406 Illinois Street. The draft report also is available for review at the following website address: http://www.mvr.usace.army.mil/Peoria/. The public review phase will end on June 28, 2002.

During this review period, the Department of Natural Resources and the Corps of Engineers will host afternoon and evening public meetings on June 19, 2002. The purpose of the meetings is to explain to the public the alternatives that the study team has selected to enhance the Peoria Lake and Farm Creek environment. Details about the location, times, and format of the public meetings are provided on page 4 of this newsletter.

STUDY BACKGROUND

The U.S. Army Corps of Engineers, Rock Island District, and the Illinois Department of Natural Resources entered into a feasibility study cost-sharing agreement in October 1999 and became "partners" in a combined effort to restore the environment in the Illinois River along the Peoria Riverfront. The study area includes Lower Peoria Lake and the Farm Creek Watershed.

The Peoria Lake study area is approximately 130 miles long, from Henry, Illinois, to Naples, Illinois. Various locations were looked at within the study area, including both Upper and Lower Peoria Lakes. Early in the study process, the Corps of Engineers – Department of Natural Resources study team agreed that due to degradation of the lakes and loss of depth and diversity, restoration in either Upper or Lower Peoria Lake would provide very similar benefits. Therefore, based on study authority which specifically references the Peoria Riverfront, previous studies identifying suitable locations within the Lower Peoria Lake, and sponsor and local interest, the study team determined that restoration alternatives would focus on the Lower Peoria Lake.

Once it was determined that the focus of the alternatives would be Lower Peoria Lake, the tributaries draining to this area became the logical place for tributary alternatives to be investigated. The Farm Creek watershed has a locally led planning effort underway, funded by the Illinois Environmental Protection Agency (EPA). This planning effort has generated a comprehensive basin inventory, agency support – both financial and technical, and a consensus on watershed restoration and management goals, objectives, and actions. These activities were occurring concurrently with the Feasibility Study.

STUDY GOAL AND OBJECTIVES

The main goal of the study was to enhance aquatic habitats by restoring depth diversity and reducing sediment delivery and deposits in Peoria Lake, with secondary benefits to recreational boating and fishing.

Objectives to address this goal were to:

- **Restore depth diversity** – Sedimentation has resulted in the loss of lake depth and volume while filling the lake to a nearly uniform shallow depth outside of the navigation channel. These changes have severely impacted a number of historic habitat types including off-channel overwintering, spawning, and nursery habitat for fish. Increasing overall depth and variability of depth would restore currently limited habitat to the lake area.
- **Provide structure for aquatic organisms** – Due to sedimentation, much of the lake bottom has a uniform shallow depth with a silt substrate. Introducing additional structure (e.g., rock jetties/reefs, woody debris, etc.) would provide valuable refuge, feeding, spawning, and nursery areas for aquatic organisms.
- **Increase habitat diversity** – As part of any restoration features, efforts should be made to restore the overall habitat diversity within Peoria Lake. Providing deepwater channels and holes through shallower areas and creating islands to increase shoreline area and provide additional terrestrial habitat would

restore some of the former diversity which was historically present in the lake.

- **Improve habitat value for migratory waterfowl and shorebirds** – The Illinois River Valley is part of the Mississippi River flyway, a migration route for hundreds of thousands of waterfowl, shorebirds, and neotropical migrants. However, the study area has not been well utilized in recent times. Additional areas for waterbird resting, nesting, and feeding should be evaluated.
- **Improve water quality** – Due to the extensive lake size and shallow water depths, Peoria Lake is highly susceptible to wind and wave action that result in the resuspension of sediments, further limiting fish, aquatic vegetation, macro-intertebrates, and mussels. Reducing sediment resuspension would provide considerable benefits to aquatic species. Further, impaired water quality due to sedimentation has resulted in Farm Creek being placed on the EPA 303(d) list of impaired waters. Reduced sediment delivery to Farm Creek from its tributaries will improve water quality in the stream upstream of Farmdale Dam.
- **Maximize sustainability of project features** – If restorative measures are implemented, considerable effort should be directed to making project features sustainable (e.g., bank protection to stabilize islands, sufficient flow to minimize sedimentation, or deflection of sediment from dredged areas).
- **Reduce sediment delivery to Peoria Lake from tributary streams** – The direct tributaries to Peoria Lake compose 3% of the total drainage area at Peoria, and deliver 40% or more of the sediment deposited in the lake. Reducing sediment transport from this relatively small area would result in considerable reductions in total sediment rates in the lake.
- **Create riparian and wetland habitat along tributary streams** – Restoring prairie and wetlands along tributaries presents opportunities to restore significant habitat types that were formerly abundant in the state, but that have been greatly reduced.

STUDY CRITERIA FOR PEORIA LAKE

Several alternatives were considered to meet the objectives listed above. Criteria used to weigh the alternatives were:

- The measures should be designed to meet identified biological goals – primarily focused on creating aquatic habitat for fish (overwintering, spawning, nursery, and feeding), while maximizing habitat diversity to benefit waterfowl, shorebirds, invertebrates, and plants.
  - Overwintering habitat – depth of greater than 6 feet optimal.
  - Spawning and nursery habitat – varies by species, however firm substrate preferred.
- Minimal Operations and Maintenance to maintain measures (sustainability).
- Measures must be acceptable to the wide range of interested local and State parties (acceptability – effects on views, recreational use potential).

Along with the criteria listed above, the study team also considered cost effectiveness, resource significance, hydrology and hydraulics, public acceptability, and real estate considerations.

POTENTIAL MEASURES FOR PEORIA LAKE

The following measures were considered in the study to achieve the study's goal and objectives and to meet the formulation criteria discussed above.

- **Dredge off-channel areas to greater than 6 feet to serve as overwintering fish habitat –** The average depths of off-channel areas in much of Peoria Lake, outside of the navigation channel, are only 1-2 feet. The proposed restoration measure includes dredging areas to greater than 6 feet of depth. This is proposed to be done as a series of holes and connecting channels. Due to relatively high historic sedimentation rates, some level of overdredging is necessary. The average lake bottom elevation in these areas will be 11 feet or greater.
- **Dredge areas to at least 4 feet to increase diversity of aquatic habitat –** Due to relatively high historic sedimentation rates, some level of overdredging is necessary. This shallow depth will roughly follow historical lake contours and acreage to roughly 6 feet to allow for sedimentation rates.
- **Dredge with island construction to create flowing side channel habitat –** Create flowing habitat for riverine aquatic species, separated from navigation channel. The flow within a created side channel also has the potential to minimize sedimentation and creates the potential for periodic scouring, helping to maintain the deepwater habitat created.
- **Island creation –** The construction of islands would increase habitat diversity by providing shoreline and terrestrial habitat and areas for migratory birds. They can serve as a low-cost placement area for dredged materials from other project measures. Islands also serve as wind and wave breaks to reduce the resuspension of sediments, thereby improving water quality.
- **Aquatic structure –** Much of the lake currently is a uniform depth with a soft substrate. The addition of firm structure, such as rock jetties/reefs, rock riprap,

or root wads, would provide additional habitat diversity.

- **Closing structures –** In areas where there is little potential for higher current velocities to maintain water depth, deepwater habitat created by dredging has the potential to fill rapidly with sediments. Closing structures can help to minimize flow into these deepwater areas, reducing sediment delivery and increasing sustainability. Rock closing structures also provide aquatic structure.
- **Bank protection –** To maximize sediment removal, it is preferable to construct the entire islands out of the river substrate. The fine silt clay that composes this material would require some bank protection to reduce the potential for island erosion due to wind- and wake-generated waves. Rock riprap was chosen as a preferred material due to the additional aquatic structure it provides.

SELECTED RECOMMENDED PLAN PEORIA LAKE

The measures listed above were combined to make various alternative plans. The alternative plans were evaluated and one was found to best meet the criteria for Peoria Lake.

The alternative selected by the study team as the recommended plan is the "Mid-Sized Upper Island – Two Lower Islands with Side Channel" alternative. This alternative best meets the study objectives and would result in the greatest restoration of depth diversity of any of the plans proposed. The overall lake habitat diversity would be increased by adding shoreline and terrestrial habitats associated with the three islands and aquatic structures. The upper and lower features would increase diversity by incorporating different types of deepwater habitat. The dredged area behind the upper island would provide primarily backwater habitat, while the area around the lower islands would provide flowing side channel habitat. The islands would provide valuable resting, nesting, and feeding areas for waterfowl and shorebirds. The islands also would reduce wind- and wake-generated waves in the study area, helping to improve water quality by lowering turbidity levels.

STUDY CRITERIA FOR FARM CREEK

Several alternatives were studied to meet the objectives listed on pages 1 and 2 of this newsletter. Criteria used to weigh the alternatives were:

- Ability to create aquatic habitat (maximize area with 1- to 2-foot depth for wetland benefits).
- Address sediment contribution/instability.
- Proximity/relationship to any project in Peoria Lake.
- No/limited impact on flooding along tributary.
- Willing landowners/potential for partnerships.

POTENTIAL MEASURES FOR FARM CREEK

The following measures were considered in the study to achieve the study's goal and objectives and to meet the formulation criteria discussed above.

- **Wetland Impoundments** – Consideration was given to constructing wetland detention ponds. The site is suitable for either one or two wetland ponds. The measures would be designed to maximize the water surface area with a depth of 18 inches. Also, Pool 1 was designed to contain a 50-year rainfall within elevation 748 feet mean sea level.
- **Wetland plantings** – In combination with watershed wetland impoundments, planting shoreline and terrestrial vegetation would help to increase habitat values in the initial years. This would decrease the time for native plants to become established through natural succession. The selected species for wetland plantings include Prairie Cord Grass, Black Willow, and Button Bush.
- **Prairie plantings** – This site is currently in row crop agriculture. Converting some or all of the site to prairie would provide habitat value to many wetland and grassland species. The selected prairie seed mixture is a combination of grasses and forbs resembling a Native Illinois Ecotype.

SELECTED RECOMMENDED PLAN FARM CREEK

The measures listed above were combined to make various alternative plans. The alternative plans were evaluated and one was found to best meet the criteria for Farm Creek.

The alternative selected by the study team as the recommended plan includes a 4-acre and a 3-acre wetland impoundment, with 6 rows of wetland plantings and 35 acres of prairie plantings. This alternative maximizes creating wetland and riparian habitat in the project area, given the constraints over land availability for project features. Although this alternative is not anticipated to have a significant effect on sediment delivery to Peoria Lake due to its size, it will reduce sediment delivery to Farm Creek itself and improve water quality. Implementing additional similar projects throughout the watershed could ultimately result in reductions in overall sediment delivery.

PUBLIC MEETING INFORMATION

Two public meetings will take place on June 19, 2002, at the Gateway Center, 200 North East Water Street, Peoria, Illinois.

The meetings will be held at the following times:

- 2:00 p.m. – 2:30 p.m. – open session
- 2:30 p.m. – 4:00 p.m. – public meeting
- 6:00 p.m. – 6:30 p.m. – open session
- 6:30 p.m. – 8:00 p.m. – public meeting

The format for both meetings will be identical. An open session will be held for the first one-half hour of each meeting. During that period, the public is invited to view study displays. Representatives from the Department of Natural Resources and the Corps of Engineers will be on hand to meet with the public to explain the selected alternatives and to receive public comments.

The public meetings will begin at 2:30 p.m. and 6:30 p.m. The meetings will begin with a formal presentation explaining the selected alternatives and will be followed by a question and answer and comment/statement period.

All persons with an interest in the Peoria Riverfront Development Environmental Restoration Study are encouraged to attend a public meeting.

The results of the public meetings will be summarized in a final newsletter, which will be released at the end of the study.

COMMENTS?

Your comments are important to us. If you have technical comments or questions about the study, please contact Mr. Brad Thompson, Project Manager. Mr. Thompson can be reached by telephone at 309/794-5256 or by email at bradley.e.thompson@usace.army.mil.

You may write to Mr. Thompson at the following address:

District Engineer
U.S. Army Engineer District, Rock Island
ATTN: CEMVR-PM-M (Thompson)
Clock Tower Building – P.O. Box 2004
Rock Island, Illinois 61204-2004

The contact for the Illinois Department of Natural Resources is Mr. Jim Mick. Mr. Mick can be reached by telephone at 309/543-3316 or by email at jmick@dnrmail.state.il.

You may write to Mr. Mick at the following address:

Mr. Jim Mick
Illinois River Basin Coordinator
Region III Fisheries Administrator
Illinois Department of Natural Resources
700 South 10th Street
Havana, Illinois 62644

If you are aware persons who may wish to be added to the study's mailing list to receive newsletters and future study mailings, please ask them to contact Ms. Sue Simmons, Corps of Engineers, by telephone at 309/794-5573, or by email at suzanne.r.simmons@usace.army.mil.

Your Comments Are Important To Us